

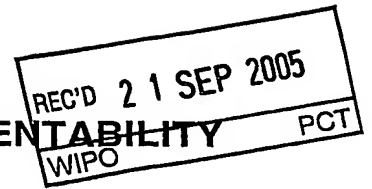
# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference <b>42 832 K</b>	<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. <b>PCT/EP2004/005378</b>	International filing date (day/month/year) <b>19.05.2004</b>	Priority date (day/month/year) <b>23.05.2003</b>	
International Patent Classification (IPC) or national classification and IPC <b>B32B21/00, E04F15/04</b>			
Applicant <b>COVERIGHT SURFACES SWEDEN AB et al.</b>			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 4 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 3 sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).			
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I      Basis of the opinion <input type="checkbox"/> Box No. II     Priority <input type="checkbox"/> Box No. III    Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV    Lack of unity of invention <input checked="" type="checkbox"/> Box No. V     Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI    Certain documents cited <input checked="" type="checkbox"/> Box No. VII    Certain defects in the international application <input type="checkbox"/> Box No. VIII   Certain observations on the international application			
Date of submission of the demand  <b>01.03.2005</b>		Date of completion of this report  <b>20.09.2005</b>	
Name and mailing address of the International preliminary examining authority:  <b>European Patent Office                  D-80298 Munich                  Tel. +49 89 2399 - 0 Tx: 523656 epmu d                  Fax: +49 89 2399 - 4465</b>		Authorized Officer  <b>Hutton, D</b>  Telephone No. +49 89 2399-8660	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/EP2004/005378

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-15 as originally filed

**Claims, Numbers**

1-18 received on 16.07.2005 with letter of 15.07.2005

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	1-18
	No: Claims	
Inventive step (IS)	Yes: Claims	1-18
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

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**Section V. Reasoned statement under Rule 66.2(a) (ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.**

The following documents are referred to in this communication:

- D1 : US 4 726 986 A (CANNADY JR DANIEL L ET AL) 23 February 1988 (1988-02-23)
- D2 : EP 1 254 984 A (JOHNS MANVILLE EUROP GMBH) 6 November 2002 (2002-11-06)
- D3 : US 2001/007710 A1 (IRELAND DOUGLAS ET AL) 12 July 2001 (2001-07-12)
- D4 : PATENT ABSTRACTS OF JAPAN vol. 017, no. 486 (M-1473), 3 September 1993  
(1993-09-03) &; JP 05 118122 A (SEKISUI CHEM CO LTD), 14 May 1993 (1993-05-14)

**Novelty and Inventive Step:-** Documents D1-D3 disclose laminates bearing microspheres in the top surface, normally as an abrasion resistant coating. In particular:- Document D1 discloses decorative laminates comprising an impregnated paper layer adjacent to a layer comprising expandable microspheres (see passages highlighted in the International Search Report (ISR)).(ii) Document D2 also discloses a paper impregnated with a thermoset (here a crosslinked starch, and coated with an acrylic based dispersion of expandable microspheres (see passages highlighted in the International Search Report (ISR), in particular the examples). (iii) Document D3 discloses an paper impregnated with a melamine-formaldehyde (MF) resin and further impregnated with a solution containing microspheres (see Examples).

Document D4 discloses the preparation of a sound absorbing material for flooring. In the example (cf. paragraphs [0021]-[0030]) a non-woven material is impregnated with a dispersion of an acrylic polymer and expandable microspheres and is attached to a wooden board to form a sound insulating flooring element. The wooden board may (cf. paragraph [0017] carry a paint or veneer layer. The process and product of the present application would appear to differ essentially from that of D4 in that a two stage impregnation is employed. This is said to lead to reduced warping of the final product. None of the cited documents deal with this problem or would render it obvious to use such a damping layer to overcome the problem of warping (expressed in the examples in terms of the balancing properties of the backing layer). The presence of an Inventive Step is thus conceded.

**Section VII. Certain defects in the international application**

(i) To meet the requirements of Rule 5.1(a)(ii) PCT, the documents cited above should be identified in the description and the relevant background art disclosed therein should be briefly discussed.

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July 15, 2005

## New CLAIMS

1. A method for producing a decorative laminate comprising a carrying layer comprising the following steps:
  - impregnating a substrate with a thermosetting and further impregnating the so impregnated substrate with a dispersion comprising thermally expandable microspheres thereby forming a layered material;
  - assembling the carrying layer with a decorative layer impregnated with a thermosetting;
  - assembling the carrying layer and the layered material whereby the layered material is positioned underside and the decorative layer is positioned topside the carrying layer.
2. A method according to claim 1 wherein the decorative layer is impregnated with a melamine resin.
3. A method according to any of the preceding claims wherein the layered material forms the outermost underside of the decorative laminate.
4. A method according to any of the preceding claims, wherein the method comprises expanding the microspheres.
5. A method according to any of the preceding claims, comprising the step of heating at least the layered material without pressing above the temperature at which the microspheres start to expand.
6. A method according to any one of the preceding claims, wherein the layered material comprises a paper.

7. A method according to any one of the preceding claims, wherein the laminate is a decorative flooring material.
8. A method according to any one of the preceding claims, wherein the laminate is a parquet flooring material.
9. A method according to any of the preceding claims wherein the thermally expandable microspheres are dispersed in a thermoplastic polymer.
10. A method according to claim 8, wherein the thermoplastic polymer has a glass transition temperature between  $-100^{\circ}\text{C}$  and  $+10^{\circ}\text{C}$ , preferably between  $-80^{\circ}\text{C}$  and  $-20^{\circ}\text{C}$ .
11. A layered material comprising a carrying layer, a decorative layer and a layered material wherein the layered material comprises a substrate which is impregnated with a thermosetting and is further coated with a dispersion comprising expandable microspheres, and wherein said layered material is positioned underside and the decorative layer is positioned topside the carrying layer.
12. A layered material according to claim 11 wherein the microspheres are dispersed within a thermoplastic polymer.
13. A layered material according to claim 12 wherein the thermoplastic polymer has a glass transition temperature between  $-100^{\circ}\text{C}$  and  $+10^{\circ}\text{C}$ , preferably between  $-80^{\circ}\text{C}$  and  $-20^{\circ}\text{C}$ .
14. A layered flooring material obtainable by a method comprising impregnating a substrate with a thermosetting, further coating or impregnating the so impregnated substrate with thermally expandable microspheres and bringing together the so impregnated substrate with a carrying layer comprising topside a decorative layer impregnated with a thermosetting, wherein said substrate is positioned underside the carrying layer.

15. A layered flooring material obtainable according to claim 14 wherein the thermally expandable microspheres are dispersed in a continuous phase comprising a thermoplastic polymer preferably having a glass transition temperature between  $-100^{\circ}\text{C}$  and  $+10^{\circ}\text{C}$ , preferably between  $-80^{\circ}\text{C}$  and  $-20^{\circ}\text{C}$ .
16. A layered flooring material obtainable according to claim 14 or 15 wherein the heating is conducted under substantial pressure.
17. A layered material according to any of the claims 11-16, wherein the disperse phase comprises a polyurethane.
18. A layered material according to any of the claims 11-17, wherein the substrate is a paper.